

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS)



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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING (AI&ML)

Report on “on Java Full Stack”

Event Type	:	One Week Workshop
Date	:	17th September 2025 – 23rd September 2025
Venue	:	IT Seminar Hall,2nd floor,5th Block
Resource Person	:	Mr.Aryan Shiva Krishna Karthik
Name Of the Convener:		Dr. S. Jayaprada, Professor & HOD, Dept. of CSE (AI&ML)
Name Of the Coordinators:		Mr.P.Jagadeeswara Rao,Sr.Asst. Prof.,CSE(AI&ML) Mrs.Razeena Begum,Sr.Asst. Prof.,CSE(AI&ML) Mr.Ch.John Wesily, Asst. Prof., CSE(AI&ML) Mr.L.Narendra, Sr.Asst. Prof.,CSE(AI&ML)
Targeted Audience	:	B.Tech V Sem CSE(AI&ML) students
Total No.Of Students	:	141
Hackathon Batches	:	35

Objective Of the Event

The objective of the event was to provide students with practical knowledge and hands-on experience in Full Stack Java development. It aimed to help participants understand both front-end and back-end technologies, database management, and integration of various tools used in real-world projects. Through interactive sessions, coding exercises, and a final hackathon, the workshop encouraged teamwork, problem-solving, and the development of complete web applications using modern Java technologies.

DATE: 17/09/2025

DAY: WEDNESDAY

MORNING SESSION:

The one-week workshop on Java Full Stack commenced on the morning of Wednesday, September 17, 2025, at LBRCE Mylavaram, Andhra Pradesh. The session began with inaugural addresses.



The workshop continued with addresses from key personnel.



Following the opening remarks, the main technical session was initiated.



The focus for Day 1 was on building a strong foundation for the full-stack journey. The topics



Additionally, a resource link has been shared with the participants to provide access to session materials, code, or other workshop resources. The URL is: <https://tinyurl.com/jfs-share>.

TOPICS COVERED:INSTALLATION:

Core Development Environment:

Java Runtime

Java JDK 21 (LTS) - Eclipse Adoptium Temurin (latest)

Recommended IDE

- IntelliJ IDEA Community Edition (primary recommendation)
- Eclipse IDE (alternative if IntelliJ doesn't work)
- VS Code (optional lightweight editor)

Build & Dependency Management

- Apache Maven 3.9.x (primary build tool)

Version Control

- Git (core version control system)
- Git SCM (Git command line tools)
- GitHub Desktop (optional GUI for Git)

Developer Toolbox Categories

IDEs (Integrated Development Environments)

Build Tools

Industry Standard Tools

Date: 18th September 2025

Department: CSE (AI & ML)

MORNING SESSION:

The session was conducted by the invited Aryan sir, who guided the students in brainstorming and designing the **E-Commerce Mini Application** project.

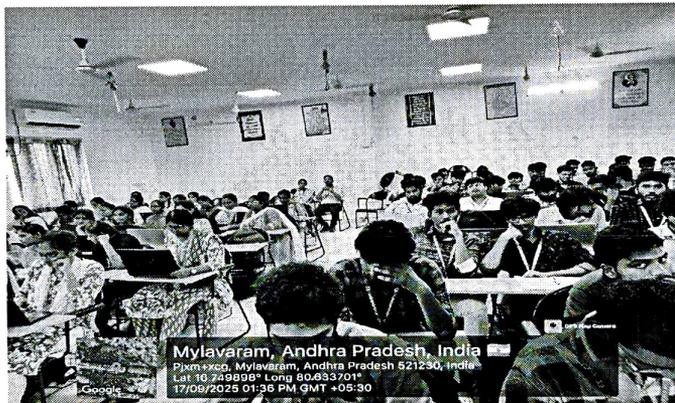
covered included:

- Core Java & OOP
- Java Basics
- Developer tools
- IDE Eclipse

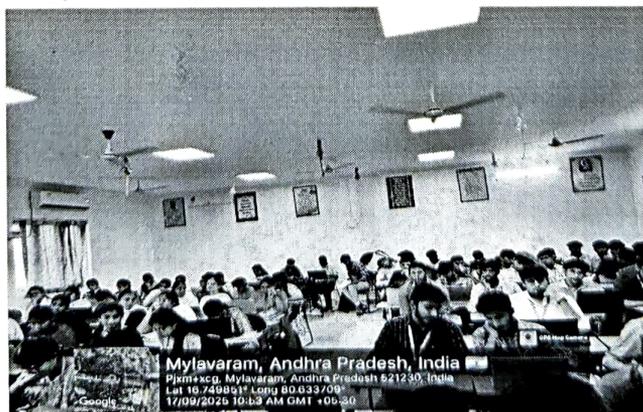
Participants then engaged in a hands-on lab session, applying the concepts discussed during the presentation.

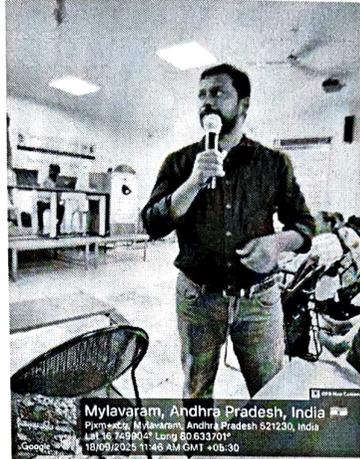
AFTERNOON SESSION:

the afternoon session of the Java Full Stack workshop is underway. The session is focused on hands-on practicals and live demonstrations. The participants are actively engaged in coding on their laptops, with instructors available to provide individual assistance and guidance.



The hands-on lab is supplemented by live demonstrations from the main instructor, who is guiding the participants through the exercises from the stage.

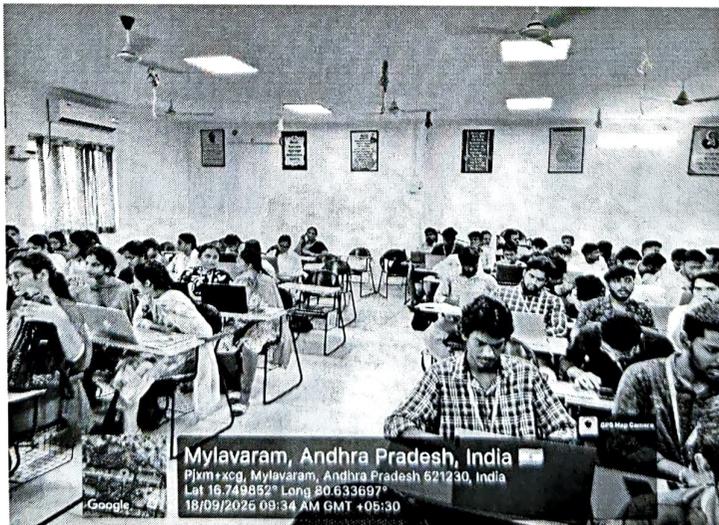




Activities Conducted

1. Idea Presentation by Students

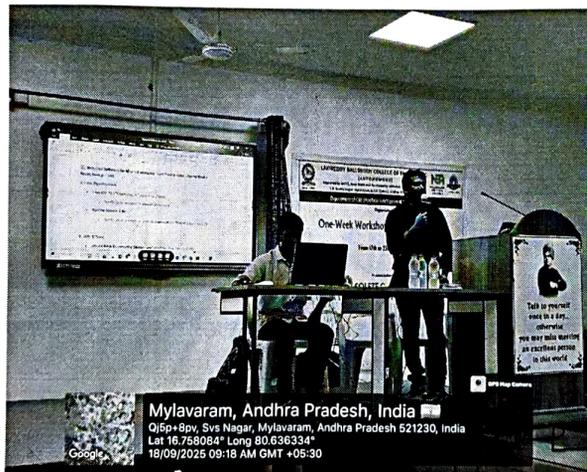
- Students shared their **own ideas** for developing features of the *Mini E-Commerce App*.
- Discussion included:
 - Product categories
 - User experience features (login, cart, wishlist, search, filters)
 - Admin functionalities (inventory management, order tracking)
 - Payment and order modules



2. Database Design – Table Listing

- Students worked on identifying and listing the **database tables** needed for the project.
- Key suggested tables included:
 - **Users** (user_id, name, email, password, role)

- **Products** (product_id, name, description, price, stock, category_id)
- **Categories** (category_id, category_name)
- **Orders** (order_id, user_id, order_date, status, total_amount)
- **Order_Items** (order_item_id, order_id, product_id, quantity, price)
- **Cart** (cart_id, user_id, product_id, quantity)
- **Vendors / Sellers** (vendor_id, name, contact_info, ratings)
- **Payments** (payment_id, order_id, amount, method, status, date)
- **Reviews** (review_id, product_id, user_id, rating, comment, date)
- **Tags / SEO Keywords** (tag_id, product_id, keyword)
- **Reorder Levels** (product_id, min_stock, reorder_quantity)



Student Participation

- Students **actively presented ideas** and collaborated in small groups.
- Different teams suggested **unique features** such as AI-based recommendations, offer management, and return policies.
- Everyone contributed towards shaping the **database schema**.

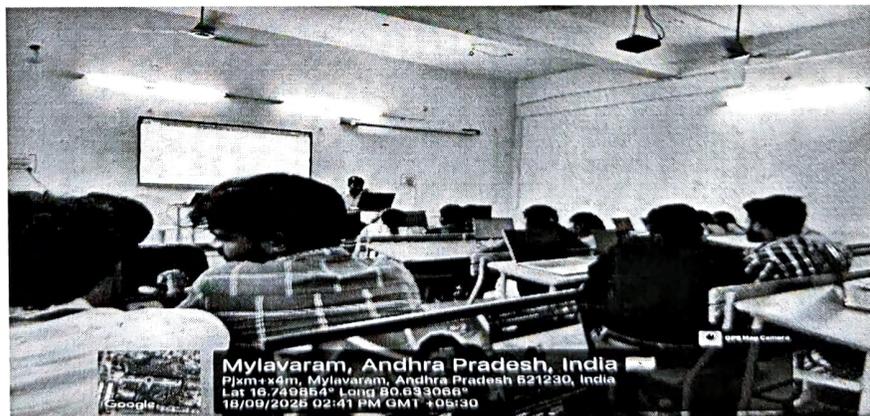


AFTERNOON SESSION:

Activities Conducted

1. Team Formation

- Students were divided into **individual teams** to work collaboratively.
- Each team was assigned the task of designing the **database tables** for their version of the *Mini E-Commerce Application*.

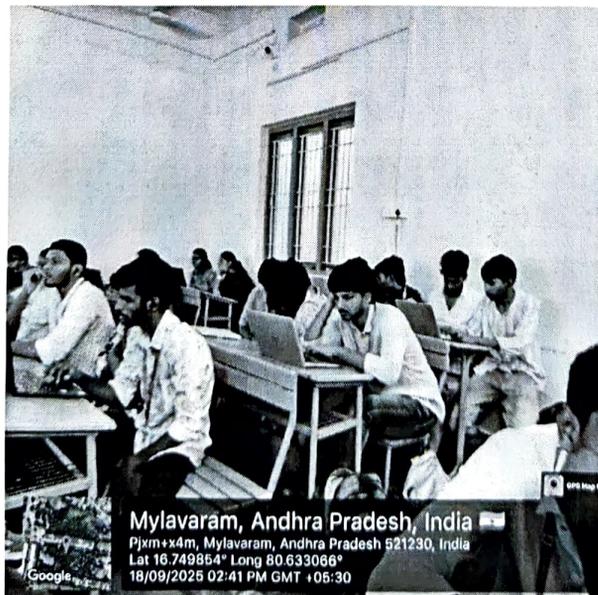


2. Database Table Creation

- Teams created the **essential tables** for the mini-project, building on the morning session's brainstorming.
- Each team worked independently and suggested additional fields to make the app more realistic.
- Examples of tables designed:
 - **Users Table** – details of customers, admins, and vendors.
 - **Products Table** – product details like name, price, stock, and category.
 - **Orders Table** – tracking orders placed by users.
 - **Cart Table** – temporary storage of user-selected items.
 - **Payments Table** – payment details and transaction status.

3. Team Discussions & Presentations

- Teams explained their **logic behind table creation**.
- Cross-questioning and feedback from the resource person ensured better **understanding of normalization and real-world project flow**.



Student Participation

- All students **actively engaged** in the team activity.
- They demonstrated **problem-solving** by adding tables like *Vendors*, *Reviews*, *Offers*, and *Reorder_Levels* beyond the standard ones.
- Team spirit and collaboration were strongly evident.

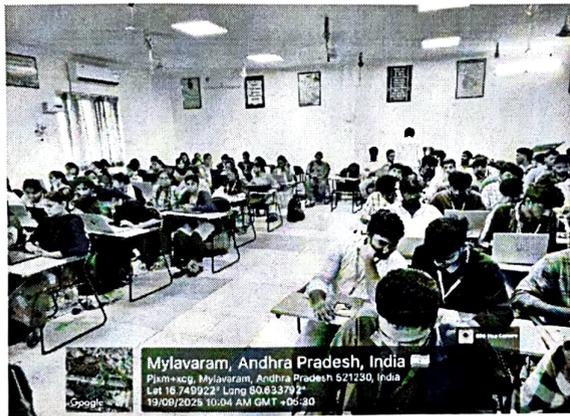
Date: 19th September 2025

Day: Friday Morning

Location: Mylavaram, Andhra Pradesh, India

MORNING SESSION

Introduction and Installation of Tools: PostgreSQL and pgAdmin4



Objective

The objective of this session was to introduce students to PostgreSQL, an advanced open-source relational database system, and pgAdmin4, a powerful GUI tool for managing PostgreSQL databases. The session focused on understanding the basics of these tools and successfully installing them on participants' systems.

Session Activities

- Introduction to PostgreSQL: Explanation of databases, overview, and features.
- Introduction to pgAdmin4: Description and features.
- Installation Process: Step-by-step PostgreSQL and pgAdmin4 installation and configuration.
- Hands-on Practice: Students installed, troubleshooted, and created a sample database.

Outcomes

- Students gained basic knowledge of PostgreSQL and pgAdmin4.
- Successful installation of PostgreSQL and pgAdmin4 by all participants.
- Understanding of connecting pgAdmin4 with PostgreSQL and performing basic operations.

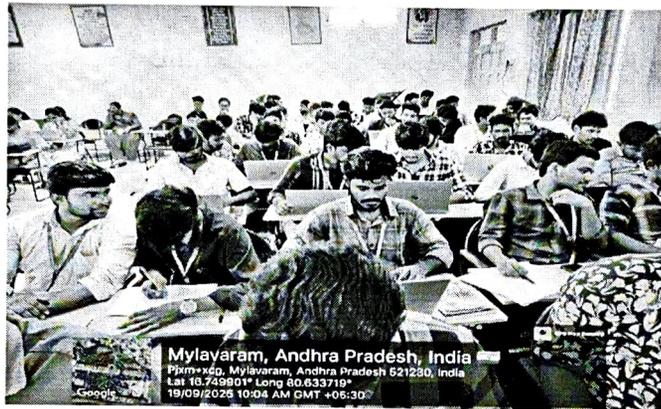
Observations

Active participation from students.

- Some students faced configuration issues but resolved with assistance.
- Session helped build confidence in working with database tools.

Conclusion

The Friday morning session on **Introduction and Installation of PostgreSQL and pgAdmin4** was highly successful. Students not only learned the theory but also practiced installation, ensuring they are ready for further sessions involving database creation, queries, and management.



AFTERNOON SESSION:

Topic: Full Stack Java: Structured Queries and CRUD Operations

Objective: The workshop was designed to provide students with hands-on experience in building a full-stack application. The primary focus was on connecting a Java back-end to a database and performing the four essential **CRUD (Create, Read, Update, Delete)** operations using structured queries.



Workshop Highlights

The session began with a brief recap of the necessary technologies, including Java, Spring Boot, and database concepts. The main part of the workshop was a practical session where participants built a small application.

- **Structured Queries:** Participants learned how to write and execute basic SQL queries to

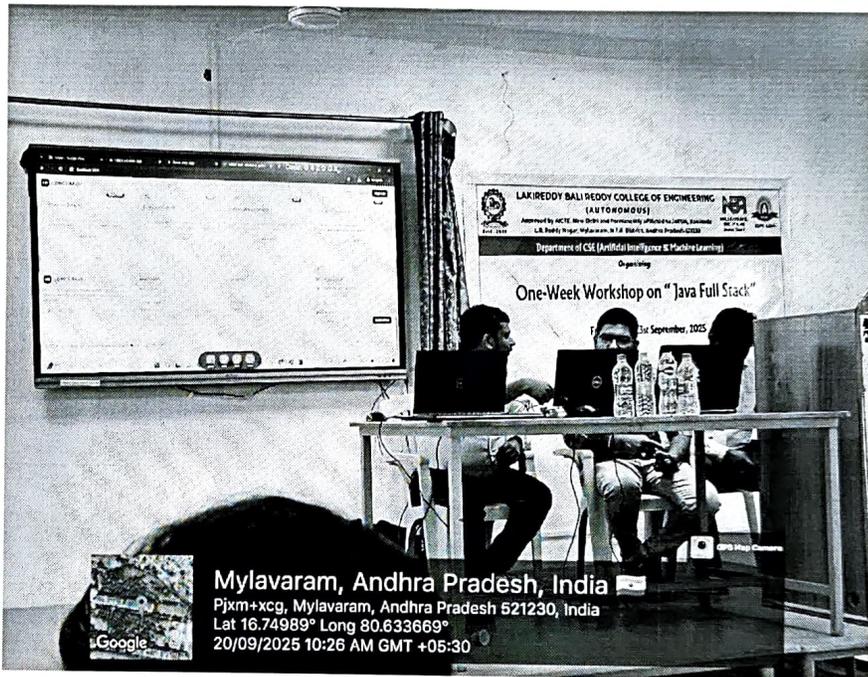
WORKSHOP REPORT:

Node.js & Visual Studio Code Fundamentals

Date: Saturday Morning, 20/09/2025

MORNING SESSION

Objective: The session was designed to introduce participants to the fundamental concepts of **Node.js** and the essential features of **Visual Studio Code (VS Code)**. The goal was to equip them with the basic tools and knowledge needed to start developing web applications.



Key Highlights

The morning session was highly practical, with a focus on setting up the development environment and writing the first lines of code.

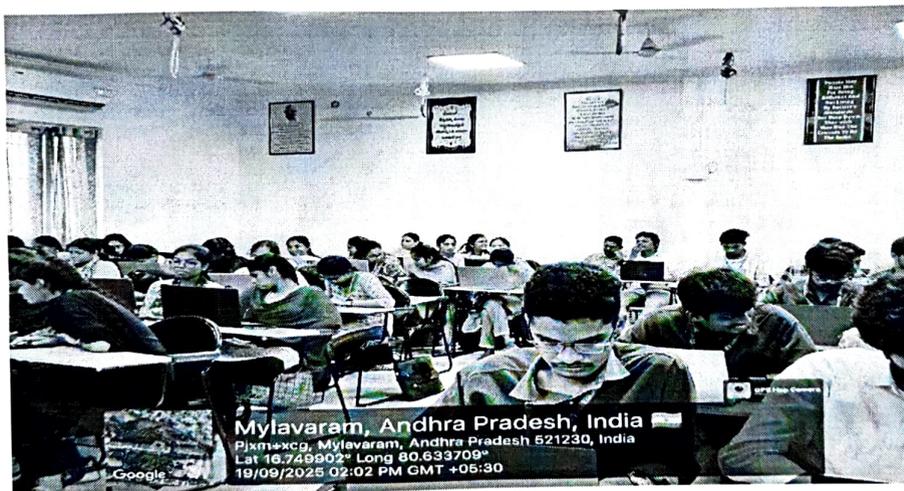
- **Understanding Node.js:** The workshop began with an explanation of Node.js as a JavaScript runtime environment. Participants learned why it's used for server-side development and its role in building scalable web applications. We covered core concepts like event-driven architecture and asynchronous I/O.
- **Visual Studio Code (VS Code):** We spent a significant amount of time on the VS Code editor. This included:

Installation and Setup: Guiding participants through the process of downloading and installing VS Code.

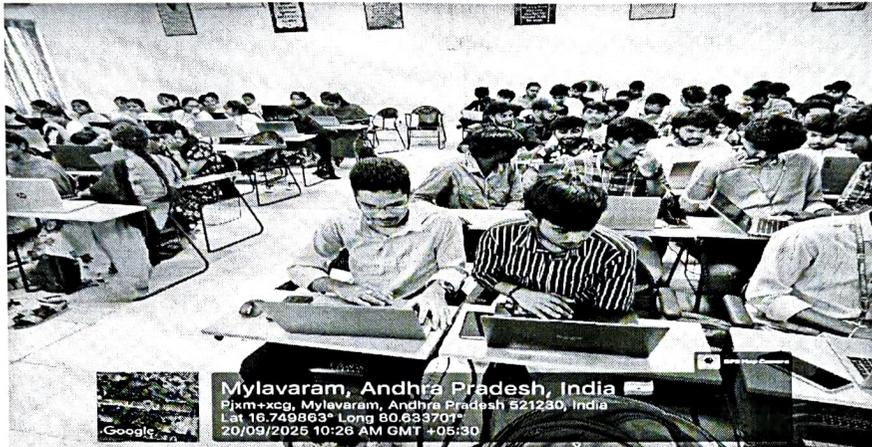
- **User Interface:** A tour of the editor's layout, including the Explorer, Editor, and Activity Bar.
- **Essential Features:** We demonstrated key features like the integrated terminal, IntelliSense (autocompletion), and the debugger. * **First Application:** To solidify the learning, participants followed along to create a simple "Hello, World!" application using Node.js and VS Code. This included:
 - Creating a new project folder.

interact with the database. This included writing INSERT, SELECT, UPDATE, and DELETE statements.

- **CRUD Implementation:** The core of the day was applying these queries to build a fully functional application.
- **Create:** We implemented a form on the front-end that allowed users to input data. This data was then sent to the back-end and inserted into the database.
- **Read:** Participants learned how to retrieve all records from the database and display them on a web page, creating a view of the stored data.
- **Update:** We worked on functionality that allowed users to select a record, modify its data, and then send the updated information to the back-end to be saved in the database.
- **Delete:** A button was added to each record, enabling users to permanently remove data from the database.



- Writing a basic JavaScript file (`app.js`).
- Using the integrated terminal to run the file with the `node` command.



AFTERNOON SESSION

Workshop Report: Full Stack JavaScript

Objective: The workshop was designed to provide a comprehensive overview of full-stack development using JavaScript for both the front-end and back-end. Participants learned how to create a complete web application using a single language.

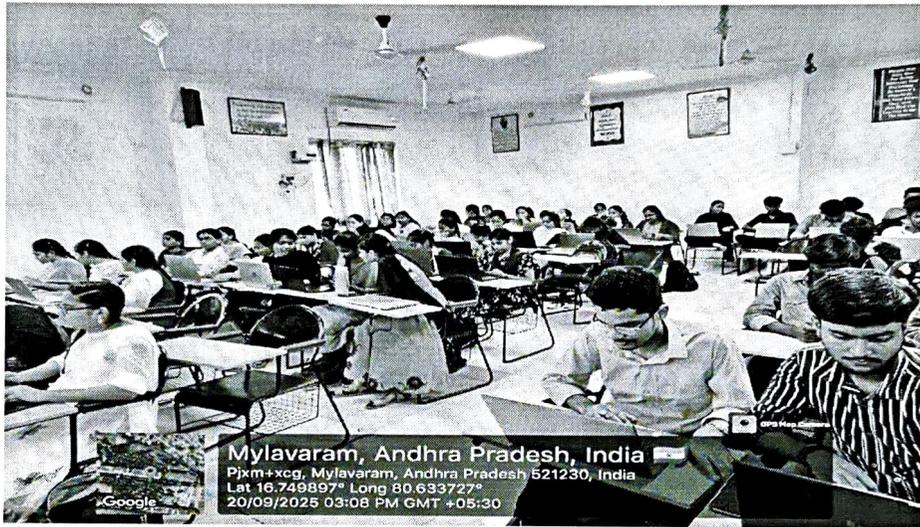


Key Highlights

The session was structured to cover the entire development stack, emphasizing how JavaScript connects the different layers.

- **Back-End with Node.js:** The workshop began with a focus on **Node.js**. Participants learned how to use Node.js to build a server-side application. We covered how to set up a server, handle HTTP requests, and create RESTful APIs to manage data. This allowed students to understand the fundamentals of back-end logic.

- **Front-End Development:** The next phase was dedicated to building the user interface. We used front-end frameworks like **React** or **Next.js** to create a dynamic and interactive front end. Participants learned how to create components, manage state, and render data retrieved from the back-end APIs.
- **API Integration:** A crucial part of the workshop was connecting the front-end and back-end. Participants learned how to use JavaScript's built-in `fetch` API or libraries like `axios` to make requests to the back-end. This is where the full-stack concept comes to life, as data flows seamlessly between the server and the client.



Workshop Report: Enhancing Front-End Usability

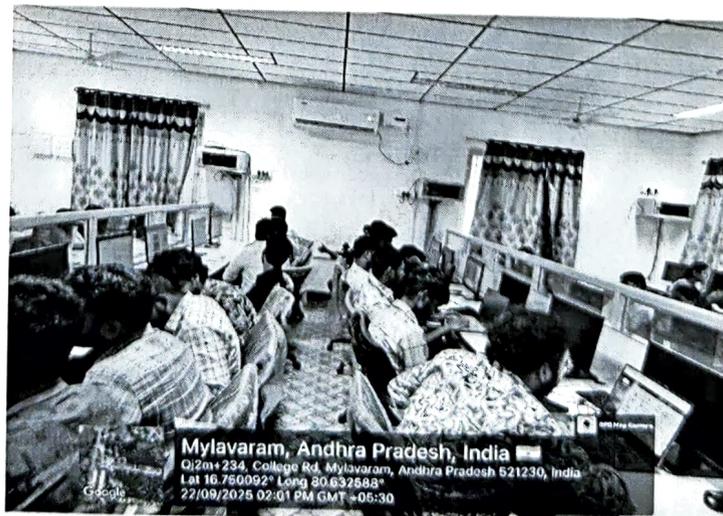
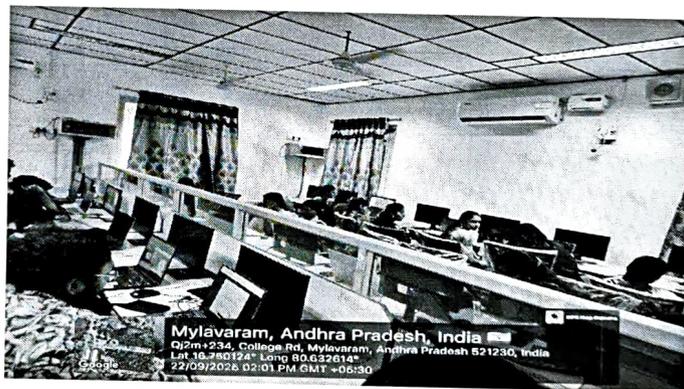
Date: Monday Morning, 22/09/2025

MORNING SESSION

Objective: The morning session was dedicated to improving the user experience (UX) and user interface (UI) of the front-end application. The focus was on adding new pages and implementing design principles to make the application more intuitive and user-friendly.



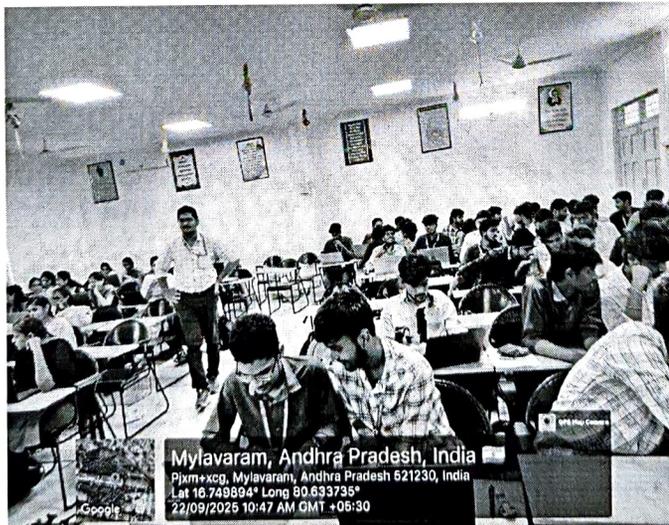
- **HTTP Methods:** Understanding the purpose of HTTP methods like GET, POST, PUT, and DELETE in the context of CRUD operations.
- **Request and Response:** Learning how to handle incoming requests from the front-end and send back a structured response, typically in JSON format.
- **Structuring the Back-End:** A critical part of the session was understanding how to organize the back-end codebase. We discussed the importance of a clear and logical structure, including:
 - **Routing:** Setting up different API endpoints to handle specific requests (e.g., /api/users, /api/products).
 - **Controllers:** Implementing functions that contain the core logic for each API endpoint.
 - **Models:** Defining data structures that represent the information being stored and manipulated.



Key Highlights

This session moved beyond the basic structure and into the practicalities of creating a robust and appealing application.

- **Multi-Page Front-End:** Participants learned how to add new pages to the existing front-end. This involved creating new components and setting up routing to allow users to navigate between different sections of the application. The goal was to break down the application's functionality into logical, distinct views.
- **User-Friendly Design:** We focused on key principles of good UX design. The session covered:
 - **Intuitive Navigation:** Designing a clear and simple navigation menu that makes it easy for users to find what they're looking for.
 - **Responsive Layouts:** Ensuring the application looks and functions correctly on different screen sizes (mobile, tablet, and desktop).
 - **Feedback and Validation:** Implementing features like form validation to provide immediate feedback to the user and prevent errors. * **Styling and Aesthetics:** We explored how to use CSS frameworks and custom styles to make the application visually appealing. This included topics like color schemes, typography, and spacing to create a clean and professional look



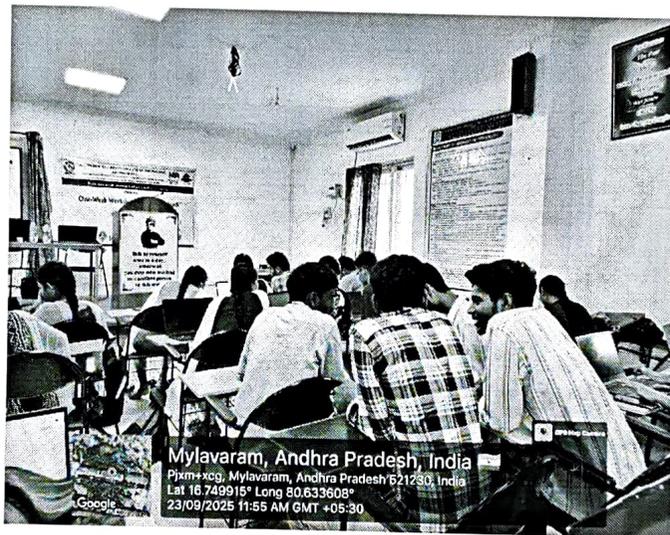
AFTERNOON SESSION

Key Highlights

The workshop was a deep dive into the server-side components of the application.

- **Introduction to APIs:** The session began with a conceptual overview of what an API (Application Programming Interface) is and why it's essential for communication between the front-end and the back-end. Participants learned that APIs define the rules for how different software components should interact.
- **Developing APIs:** We then moved into a hands-on portion where participants learned how to design and build their own RESTful APIs. This included:

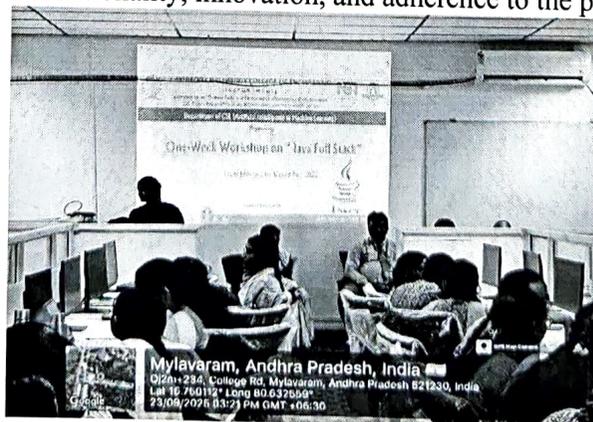
- **Development Environment: IntelliJ IDEA** was the primary IDE, providing a robust environment for coding.
- **Database: PostgreSQL** was used as the relational database, a standard in enterprise-level applications.
- **Workflow and Output:** The development process was streamlined and industry-standard.
 - Teams developed back-end APIs that interacted with the PostgreSQL database.
 - The output of these APIs was displayed and tested using **Postman**, a popular API client, which showed the results of their data operations (CRUD).
 - The output was accessible through specific port numbers, demonstrating a complete and working server-client relationship.



AFTERNOON SESSION

Hackathon Prize Distribution & Evaluation

The hackathon concluded with an evaluation session where the teams presented their solutions. The final judging was conducted by **HOD Mam** and the **Respected Principal Sir**, who assessed the projects based on their functionality, innovation, and adherence to the problem statements.



HACKATHON DAY

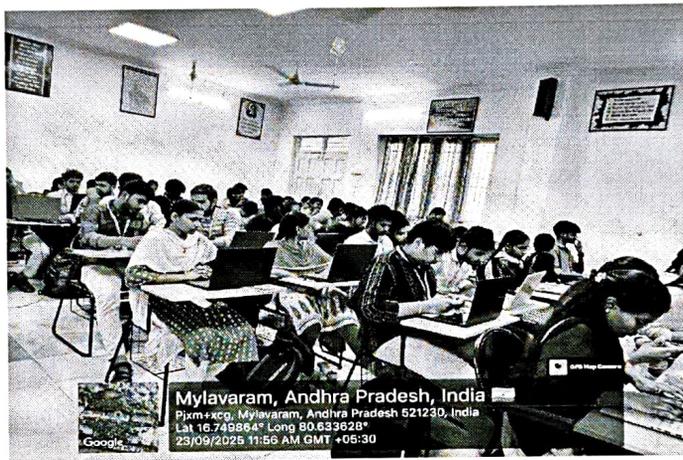
Hackathon Report

Date: September 23, 2025

Event: Hackathon

MORNING SESSION

Objective: To provide a platform for participants to work on real-world problem statements and develop solutions using a full-stack approach. The event fostered teamwork, problem-solving, and practical application of learned skills.



Event Details

The hackathon was a high-energy, competitive event that challenged participants to build functional applications from scratch.

- **Problem Statements:** A total of **8 diverse problem statements** were provided, allowing teams to choose a challenge that aligned with their interests and skills. Examples included building applications for managing products, vendors, and categories.
- **Team Participation:** The event saw enthusiastic participation from **34 teams**, each working collaboratively to design and implement their solutions. The teams were composed of students who had recently completed the workshop, putting their new skills to the test.
- **Technology Stack:** The hackathon utilized a specific and powerful technology stack:

Evaluation Process

The judging panel meticulously reviewed the work of all 34 teams. The evaluation focused on key criteria:

- **Problem-solving:** How effectively did the team address the given problem statement?
- **Technical Implementation:** The quality of the code, use of the technology stack (IntelliJ, PostgreSQL), and the successful implementation of APIs.
- **Innovation:** The originality and creativity of the solution.
- **Presentation:** The clarity and completeness of the final product demonstration.

After a thorough review, three winning teams were selected based on their outstanding performance.

Prize Winners

The top three teams were awarded cash prizes as a recognition of their exceptional work and dedication.

- **First Place:** The winning team received a cash prize of ₹2000/-. Their project was chosen for its robust functionality and a highly innovative approach to the problem statement.



Second Place: The team in second place was awarded ₹1500/-. Their solution stood out for its clean code and efficient use of the technology stack.



- **Third Place:** The third-place team received a prize of ₹1000/-. They were recognized for their solid implementation and a user-friendly interface.



The prizes were a token of appreciation for the hard work and a great motivator for all participants. The hackathon was a huge success, showcasing the talent and skills of the students.

Impact Analysis

1. The workshop provided students with **comprehensive hands-on experience** in full stack development, covering Core Java, databases, Node.js, and front-end frameworks.
2. Participants gained **practical exposure to real-world tools** such as IntelliJ IDEA, PostgreSQL, Git, and Visual Studio Code, enhancing their technical proficiency.
3. The **team-based activities and mini projects** encouraged collaboration, creativity, and problem-solving among students.
4. The **Hackathon event** enabled students to apply learned concepts in developing complete applications, improving their coding and project management skills.

5. Students showed **increased confidence and readiness** to handle industry-level software development tasks.
6. Overall, the workshop **bridged the gap between theory and practice**, strengthening both technical competence and employability skills.



ముగిసిన వర్క్‌షాప్

ప్రజాశక్తి-మైలవరం : గత వారం రోజులుగా స్థానిక లక్ష్మిరెడ్డి బాల్రెడ్డి ఇంజనీరింగ్ కళాశాలలో జరుగుతున్న జావా ఫుల్ స్టాక్ డెవలప్మెంట్ వర్క్ షాప్ బుధవారంతో ముగిసింది. ఈ సందర్భంగా ఆ కళాశాల ప్రిన్సిపల్ అప్పారావు మాట్లాడుతూ జావా ఫుల్ స్టాక్ డెవలప్మెంట్ రంగంలో విద్యార్థులు నైపుణ్యత పెంచుకోవాలని అన్నారు. వర్క్‌షాప్‌లను విద్యార్థులు సద్వినియోగం చేసుకోవాలని సూచించారు. ఈ కార్యక్రమంలో రిసోర్స్ పర్సన్ శివకృష్ణ కార్తిక్, పి జగదీశ్వరరావు, ఎస్.కె రెజీనా బేగం, సిహెచ్ జాన్‌వెస్సీ, ఎల్ నరేంద్ర కోఆర్డినేటర్‌గా వ్యవహరించారు.

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Head Of The Department

Dr.S.Jayapada

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